

# Service Service Service

# Service Information

In this service information you will find corrections on the A10E service manual (3122 785 10430) and information on new items.

## Corrections

- See attached 'Errata Sheet' for an overview of the errors and its corrections.
- *Chapter 8 Electrical Alignments*, as given in the A10E Service Manual, was not complete. Attached find a new corrected version.
- Pin numbering on LSP silkscreen is not correct. All pins (except 1, 2, 79 and 80) are shifted one position to the right. This means for instance that pin 20 is in fact pin 18, pin 19 is pin 17, pin 40 is pin 38, etc.

## New

- During production, the following new panels are introduced:
  - A new LSP panel. The diagram, print layout and parts list are given in this document.
  - A new CRT panel. The diagram, print layout and parts list are given in this document.
- After the layout change of the LSP, the set can not be forced into Service Default Mode (SDM) anymore by shorting the jumper wires 9261 and 9262. This because position nr. 3286 was added (see attached diagram A4, location F9), but is not used. Therefore point 9261 is floating. A possible service solution is:
  - Place a resistor of 1k8 (4822 051 20182) on pos. 3286. Now, the SDM can be reached via the 'normal' method.
- A special 'service extension board' for the A10 Small Signal Board (SSB) has been introduced under nr. 9965 000 07933.  
**Note:** This version is not the same as used for the EMG sets !

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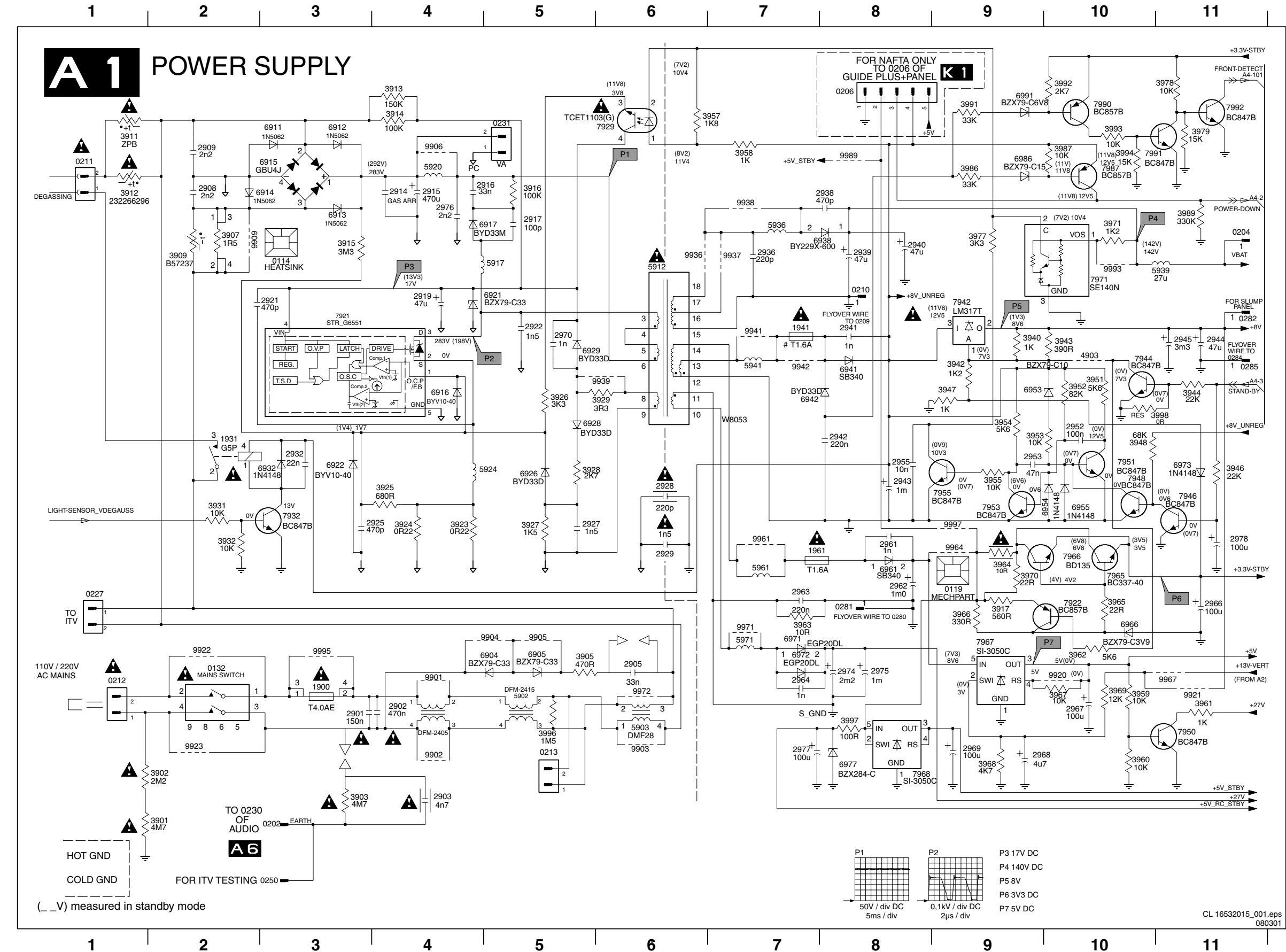


## ERRATA SHEET

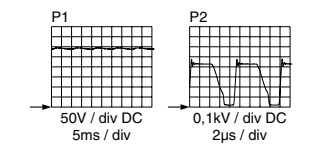
<u>Subject (page)</u>	<u>Location</u>	<u>Correction</u>	
		Present situation	Corrected situation
Chapter 1 (2)	1.1.1 Reception Stdby consumpt. 1.2.2 EXT2	<= 3 W 10-	Add <b>NTSC</b> < 3 W 10- <b>Easy link</b>
Overviews (26)	SSB comp. side IC overview	Testpoint V2 at pin 26 of IC7301 IC overview	Testpoint V2 at pin <b>54</b> of IC7301 <b>I<sup>2</sup>C</b> overview
Diagram A1 (28)	B1	Degassing coil	<b>Degaussing</b> coil
Diagram A4 (31)	A3 E1 G2 G5	To 0226 of SSB-connector [C6] A6-31 A6-34 'AUDIO-C' A6-51 'AUDIO-SURR'	To 0226 of SSB-connector [ <b>C8</b> ] <b>A6-30</b> A6-34 ' <b>AUDIO-SURR</b> ' A6-51 ' <b>AUDIO-C</b> '
Diagram A6 (33)	G2 H2	A4-34 'AUDIO-C' A4-51 'AUDIO-SURR'	A4-34 ' <b>AUDIO-SURR</b> ' A4-51 ' <b>AUDIO-C</b> '
Diagram C2 (41)	C1	C2-78	<b>C1-78</b>
Diagram C4 (44)	D7 F10 H1/H2	Internal circuit 7064 is wrong To memory [C4] To SSB connector [C7]	See A10E-DPL manual page 29 To memory [ <b>C5</b> ] To SSB connector [ <b>C8</b> ]
Diagram C6 (45)	D11 D11	'AUDIO-SURR' C8-56 'AUDIO-C' C8-57	' <b>AUDIO-C</b> ' C8-56 ' <b>AUDIO-SURR</b> ' C8-57
Diagram C8 (47)	F2	C6-56 'AUDIO-SURR'	C6-56 ' <b>AUDIO-C</b> '

# Schematics And PWB's

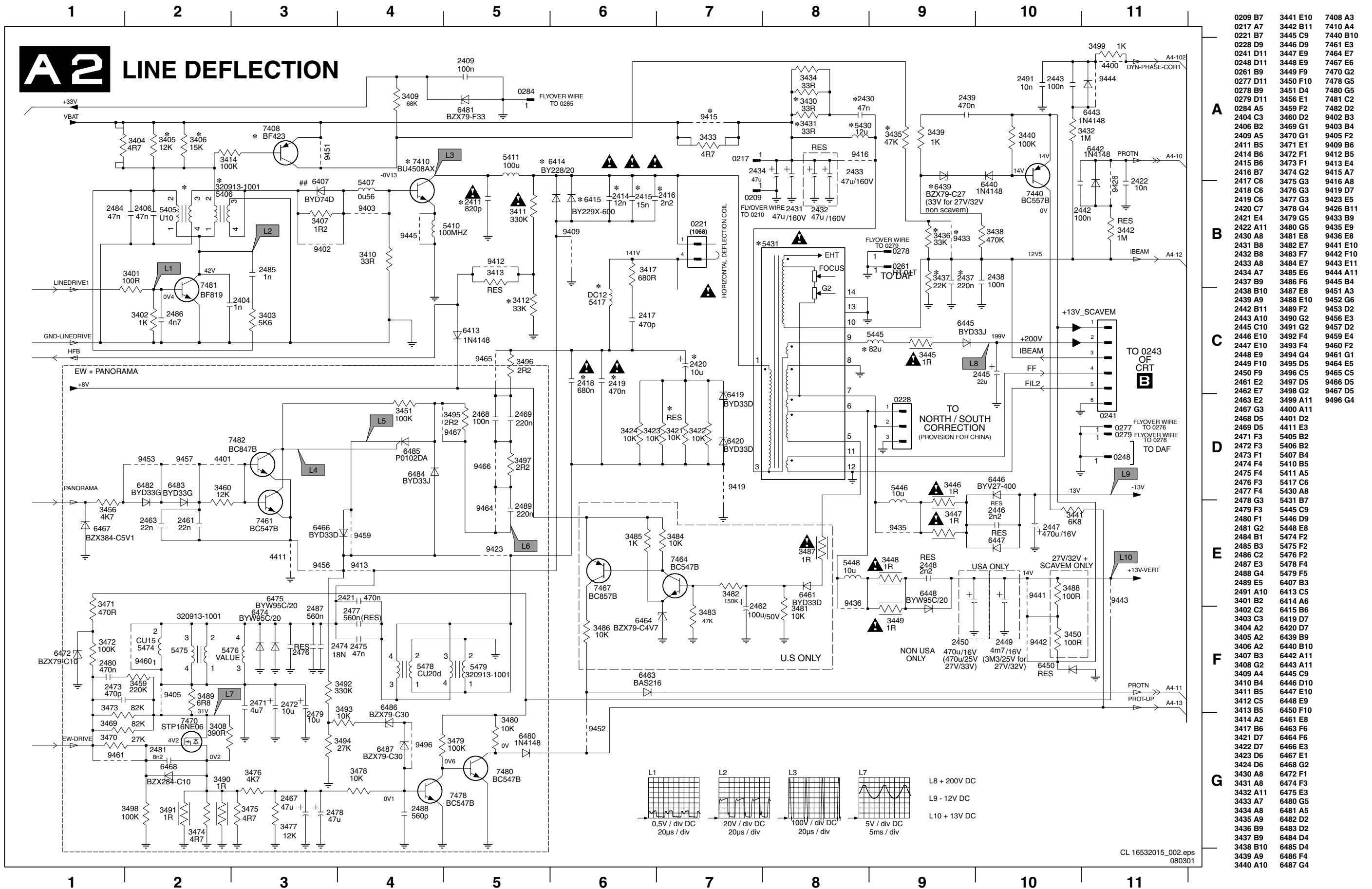
## Power Supply



0114 C3	3954 D9	9905 F5
0119 F9	3955 E9	9906 B4
0132 F2	3957 A7	9909 B2
0202 H3	3958 B7	9920 F10
0204 B11	3959 F10	9921 F11
0206 A8	3960 G10	9922 F2
0210 C8	3961 F11	9923 G2
0211 B1	3962 F10	9936 B6
0212 F1	3963 F7	9937 B7
0213 G5	3964 E9	9938 B7
0227 F1	3965 F10	9939 D6
0231 A5	3966 F9	9941 C7
0250 H3	3967 F10	9942 D7
0281 F8	3968 G9	9961 E7
0282 C11	3969 F10	9964 E9
0285 D11	3970 E9	9967 F11
1900 F3	3971 B10	9971 F7
1931 D2	3972 B9	9972 F6
1941 C7	3973 A11	9989 B8
1961 E7	3974 A11	9993 C10
1901 G3	3986 B9	9995 F3
1902 G4	3987 B10	
1903 G4	3988 B11	
1905 F6	3991 A9	
1908 B2	3992 A10	
1909 B2	3993 A10	
1914 B4	3994 B10	
1915 B4	3996 G5	
1916 B5	3997 G8	
1917 B5	3998 D11	
1919 C4	4903 C10	
1921 C3	5902 F5	
1922 C5	5903 G6	
1925 E4	5912 C6	
1927 E5	5917 C5	
1928 E6	5920 B4	
1929 E6	5924 D5	
1932 D3	5936 B7	
1936 B7	5939 C11	
1938 B8	5941 D7	
1939 B8	5961 E7	
1940 B8	5971 F7	
1941 C8	6904 F5	
1942 D8	6905 F5	
1943 E8	6911 A3	
1944 C11	6912 A3	
1945 C11	6913 B3	
1952 D10	6914 B3	
1953 D9	6915 B3	
1955 D8	6916 D4	
1961 E8	6917 B5	
1962 E8	6921 C5	
1963 F7	6922 D3	
1964 F7	6926 D5	
1966 F11	6928 D5	
1967 G10	6929 C5	
1968 G9	6932 D3	
1969 G9	6938 B8	
1970 C5	6941 D8	
1974 F8	6942 D7	
1975 F8	6953 D9	
1976 B4	6954 E10	
1977 G7	6955 E10	
1978 E11	6961 E8	
1901 H2	6966 F10	
1902 G2	6971 F7	
1903 G3	6972 F7	
1905 F5	6973 D11	
1907 B2	6977 G8	
1909 B2	6986 B9	
1911 A1	6991 A9	
1912 B1	7921 C3	
1913 A4	7922 F10	
1914 A4	7929 A6	
1915 B3	7932 E3	
1916 B5	7942 C9	
1917 F9	7944 C10	
1923 E4	7946 E11	
1924 E4	7948 E10	
1925 E4	7950 G11	
1926 D5	7951 D10	
1927 E5	7953 E9	
1928 D5	7955 E9	
1929 D6	7965 E10	
1931 E2	7966 E10	
1932 E2	7967 F9	
1940 C9	7968 G8	
1942 D9	7971 C10	
1943 C10	7987 B10	
1944 D11	7990 A10	
1946 D11	7991 B10	
1947 D9	7992 A11	
1948 D10	9901 F4	
1951 D10	9902 G4	
1952 D10	9903 G6	
1953 D9	9904 F5	



Line Deflection



0209 B7	3441 E10	7408 A3
0217 A7	3442 B11	7410 A4
0221 B7	3445 C9	7440 B10
0228 D9	3446 D9	7461 E3
0241 D11	3447 E9	7464 E7
0248 D11	3448 E9	7467 E6
0261 B9	3449 F9	7470 G2
0277 D11	3450 F10	7478 G5
0278 B9	3451 D4	7480 G5
0279 D11	3456 E1	7481 C2
0284 A5	3459 F2	7482 D2
2404 C3	3460 D2	9402 B3
2406 B2	3469 G1	9403 B4
2409 A5	3470 G1	9405 F2
2411 B5	3471 E1	9409 B6
2414 B6	3472 F1	9412 B5
2415 B6	3473 F1	9413 E4
2416 B7	3474 G2	9415 A7
2417 C6	3475 G3	9416 A8
2418 B9	3476 G3	9419 D7
2419 C6	3477 G3	9423 E5
2420 C7	3478 G4	9426 B11
2421 E4	3479 G5	9433 B9
2422 A11	3480 G5	9435 E9
2430 A8	3481 E8	9436 E8
2431 B8	3482 E7	9441 E10
2432 B8	3483 F7	9442 F10
2433 A8	3484 E7	9443 E11
2434 A7	3485 E6	9444 A11
2437 B9	3486 F6	9445 B4
2438 B10	3487 E8	9451 A3
2439 A9	3488 E10	9452 G6
2442 B11	3489 F2	9453 D2
2443 A10	3490 G2	9456 E3
2445 C10	3491 G2	9457 D2
2446 E10	3492 F4	9459 E4
2447 E10	3493 F4	9460 F2
2448 E9	3494 G4	9461 G1
2449 F10	3495 D5	9464 E5
2450 F9	3496 C5	9465 C5
2461 E2	3497 D5	9466 D5
2462 E7	3498 G2	9467 D5
2463 E2	3499 A11	9496 G4
2467 G3	4400 A11	
2468 D5	4401 D2	
2469 D5	4411 E3	
2471 F3	5405 B2	
2472 F3	5406 B2	
2473 F1	5407 B4	
2474 F4	5410 B5	
2475 F4	5411 A5	
2476 F3	5417 C6	
2477 F4	5430 A8	
2478 G3	5431 B7	
2479 F3	5445 C9	
2480 F1	5446 D9	
2481 G2	5448 E8	
2484 B1	5474 F2	
2485 B3	5475 F2	
2486 C2	5476 F2	
2487 E3	5478 F4	
2488 G4	5479 F5	
2489 E5	6407 B3	
2491 A10	6413 C5	
3401 B2	6414 A6	
3402 C2	6415 B6	
3403 C3	6419 D7	
3404 A2	6420 D7	
3405 A2	6439 B9	
3406 A2	6440 B10	
3407 B3	6442 A11	
3408 G2	6443 A11	
3409 A4	6445 C9	
3410 B4	6446 D10	
3411 B5	6447 E10	
3412 C5	6448 E9	
3413 B5	6450 F10	
3414 A2	6461 E8	
3417 B6	6463 F6	
3421 D7	6464 F6	
3422 D7	6466 E3	
3423 D6	6467 E1	
3424 D6	6468 G2	
3430 A8	6472 F1	
3431 A8	6474 F3	
3432 A11	6475 E3	
3433 A7	6480 G5	
3434 A8	6481 A5	
3435 A9	6482 D2	
3436 B9	6483 D2	
3437 B9	6484 D4	
3438 B10	6485 D4	
3439 A9	6486 F4	
3440 A10	6487 G4	

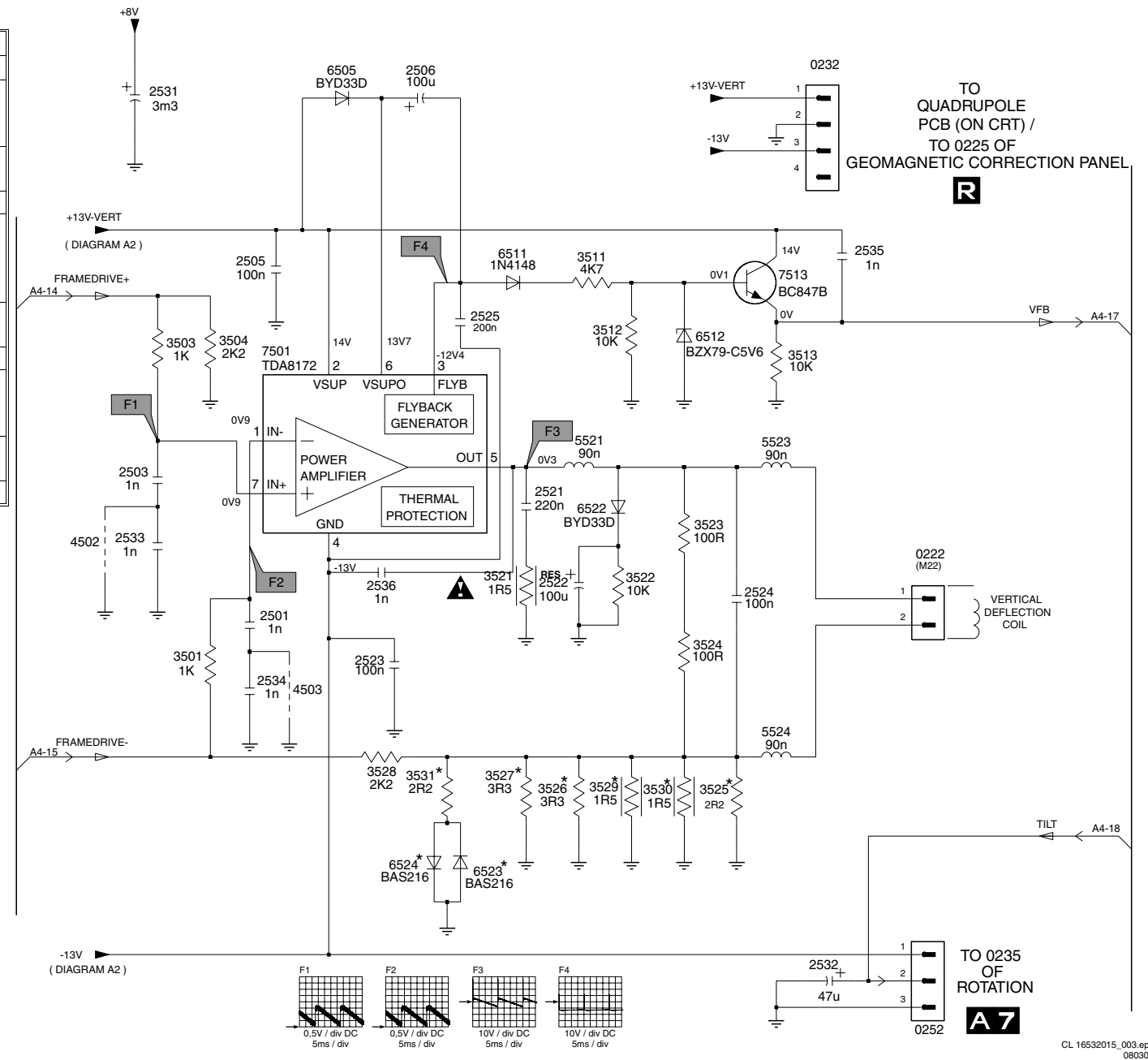
Diversity Table Diagram A2

ITEM	24PW6005	28PT5505	28PW6305	28PW6515	70WA6215	29PT5515	33PW6305	33PW6515	DESCRIPTION
2271	X	X	X	X			X	X	1U 20% 50V
2281	X	X	X	X	X				15P NP0 50V
2281				X				X	220P NP0 50V
2411	X								1N 10% 2KV
2411		X							1N2 10% 2KV
2411	X			X	X				1N5 10% 2KV
2411				X					1N8 10% 2KV
2411							X		2N2 10% 2KV
2415								X	10N 5% 1.6KV
2415	X		X						11N 5% 1.6KV
2415	X	X	X	X	X				12N 5% 1.6KV
2416			X					X	820P 10% 2KV
2416							X		1N 10% 2KV
2416				X					1N2 10% 2KV
2416	X								2N2 10% 2KV
2416		X							1N8 10% 2KV
2418	X	X	X	X					680N 5% 250V
2418							X		820N 5% 250V
2419	X								390N 5% 250V
2419			X				X		470N 5% 250V
2419			X				X		470N 5% 250V
2420	X	X	X	X					4U7 20% 250V
2420	X		X	X	X	X	X		2U2 20% 160V
2430	X	X	X	X	X				27N 10% 50V
2430	X	X	X	X	X				10N 10% 50V
2437	X								100N 10% 250V
2437	X	X	X						150N 10% 250V
2437				X					220N 10% 250V
2437			X						180N 10% 250V
2443		X							100N Y5V 25V
2461	X	X	X	X	X	X	X		100N 10% 50V
2463	X	X	X	X	X	X	X		100N 10% 50V
2469	X	X	X	X	X	X	X		220N 5% 250V
2469	X			X			X		68N 5% 400V
2471						X			4U7 10% 100V
2474	X								18N 10% 630V
2475	X	X	X	X	X	X	X		47N 10% 250V
2476	X			X	X	X	X		7N5 5% 1.6KV
2476			X						8N2 5% 1.6KV
2476			X						9N1 5% 1.6KV
2479				X					1U 20% 160V
2479	X	X	X	X	X	X	X		10U 20% 100V
2487	X	X	X	X	X	X	X		7N5 5% 1.6KV
2487		X							9N1 5% 1.6KV
2488	X	X	X	X	X	X	X		100N 16V 0805
2489	X	X	X	X	X	X	X		220N 5% 250V
2491		X							220N Y5V 25V
3220							X		150K 5% 0805
3220		X							220K 5% 0805
3220	X	X	X	X	X				82K 5% 0805
3271	X	X	X	X	X	X	X		33K 5% 0805
3271	X								82K 5% 0805
3272		X	X				X		10K 5% 0805
3272	X								2K2 5% 0805
3405	X			X	X		X		4K7 5% 5W
3405		X					X		5K6 5% 5W
3405	X								6K8 5% 5W
3412	X	X	X	X	X	X	X		100K 5% 1/6W
3430	X			X	X	X	X		33R 5% 3W
3430	X	X							68R 5% 3W
3432		X							820K 5% 0805
3434	X	X							68R 5% 3W
3435							X		27K 5% 1/6W
3435	X	X	X				X		39K 5% 1/6W
3435	X			X					47K 5% 1/6W
3436			X	X					39K 5% 1/6W
3436							X		47K 5% 1/6W
3436								X	56K 5% 1/6W
3436	X	X		X					68K 5% 1/6W
3437		X	X				X		22K 5% 1/6W
3437	X	X							33K 5% 1/6W
3442							X		560K 5% 0805
3442			X				X		820K 5% 0805
3442				X					560K 5% 0805
3442	X	X		X					1M 5% 0805

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# A3 FRAME DEFLECTION

Subject (page)	Location	Correction	Present situation	Corrected situation
Chapter 1 (2)	1.1.1 Reception			Add NTSC
	Stoby consumpt.	<= 3 W	<= 3 W	< 3 W
	1.2.2 EXT2	10-	10-	10- Easy link
Overviews (26)	SSB comp. side	Testpoint V2 at pin 26 of IC7301	Testpoint V2 at pin 54 of IC7301	
	IC overview	IC overview	IC overview	I <sup>2</sup> C overview
Diagram A1 (28)	B1	Degassing coil	Degassing coil	Degaussing coil
Diagram A4 (31)	A3	To 0226 of SSB-connector [C6]	To 0226 of SSB-connector [C8]	
	E1	A6-31	A6-30	
	G2	A6-34 'AUDIO-C'	A6-34 'AUDIO-SURR'	
	G5	A6-51 'AUDIO-SURR'	A6-51 'AUDIO-C'	
Diagram A6 (33)	G2	A4-34 'AUDIO-C'	A4-34 'AUDIO-SURR'	
	H2	A4-51 'AUDIO-SURR'	A4-51 'AUDIO-C'	
Diagram C2 (41)	C1	C2-78	C1-78	
Diagram C4 (44)	D7	Internal circuit 7064 is wrong	See A10E-DPL manual page 29	
	F10	To memory [C4]	To memory [C5]	
	H1/H2	To SSB connector [C7]	To SSB connector [C8]	
Diagram C6 (45)	D11	'AUDIO-SURR' C8-56	'AUDIO-C' C8-56	
	D11	'AUDIO-C' C8-57	'AUDIO-SURR' C8-57	
Diagram C8 (47)	F2	C6-56 'AUDIO-SURR'	C6-56 'AUDIO-C'	



- 0222 D8
- 0232 A8
- 0252 F8
- 2501 D5
- 2503 D4
- 2505 B5
- 2506 A6
- 2521 D6
- 2522 D6
- 2523 E5
- 2524 D8
- 2525 C6
- 2531 B3
- 2532 F8
- 2533 D4
- 2534 E5
- 2535 B8
- 2536 D5
- 3501 E4
- 3503 C4
- 3504 C5
- 3511 B7
- 3512 C7
- 3513 C8
- 3521 D6
- 3522 D7
- 3523 D7
- 3524 D7
- 3525 E7
- 3526 E6
- 3527 E6
- 3528 E6
- 3529 E7
- 3530 E7
- 3531 E6
- 4502 D4
- 4503 E5
- 4504 E5
- 5521 C7
- 5523 C8
- 5524 E8
- 6505 A5
- 6511 B6
- 6512 C7
- 6522 D7
- 6523 F6
- 6524 F6
- 7501 C5
- 7513 C8

1 2 3 4 5 6 7 8 9

F

E

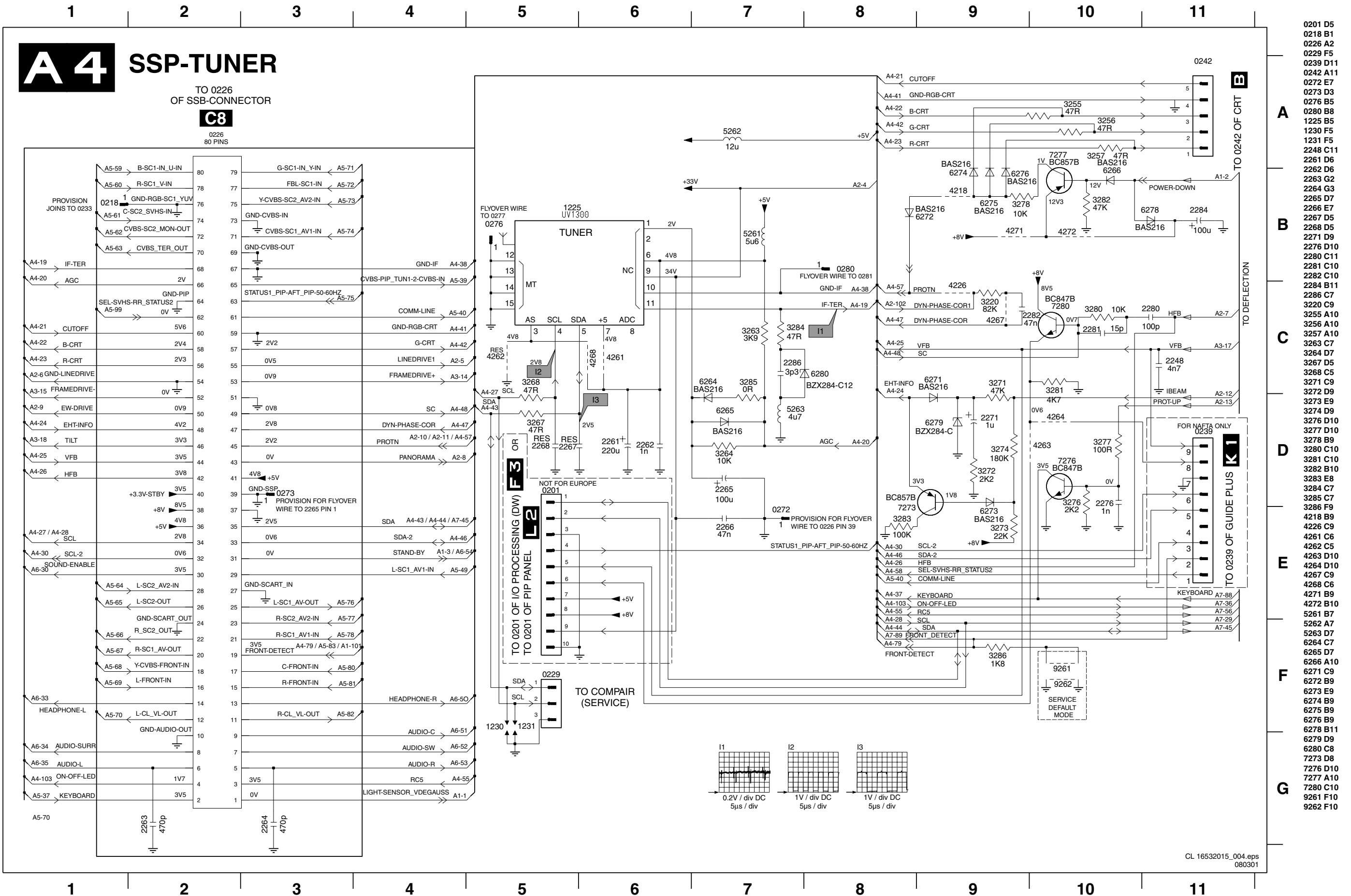
C

B

A

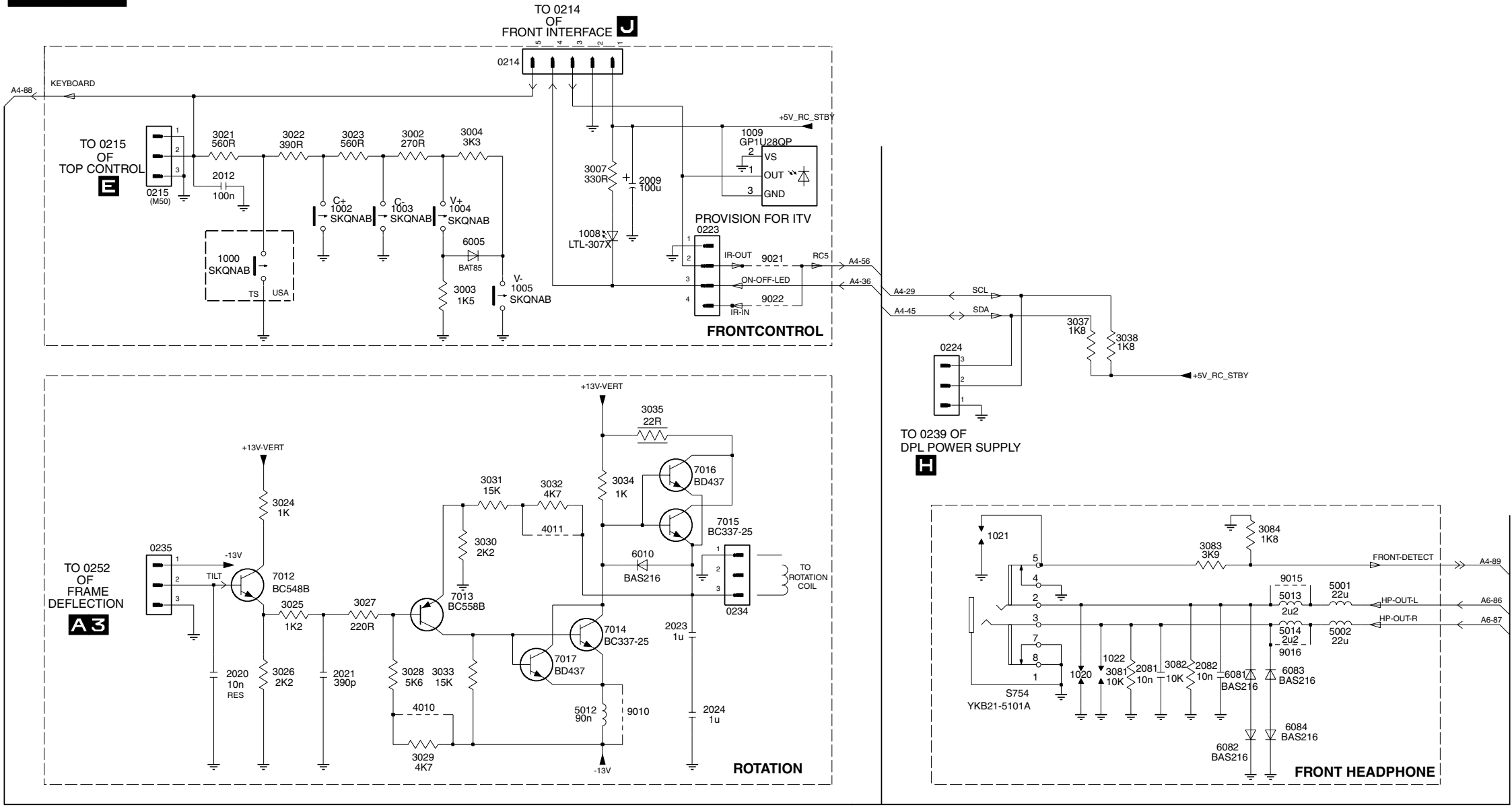
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SSP-Tuner



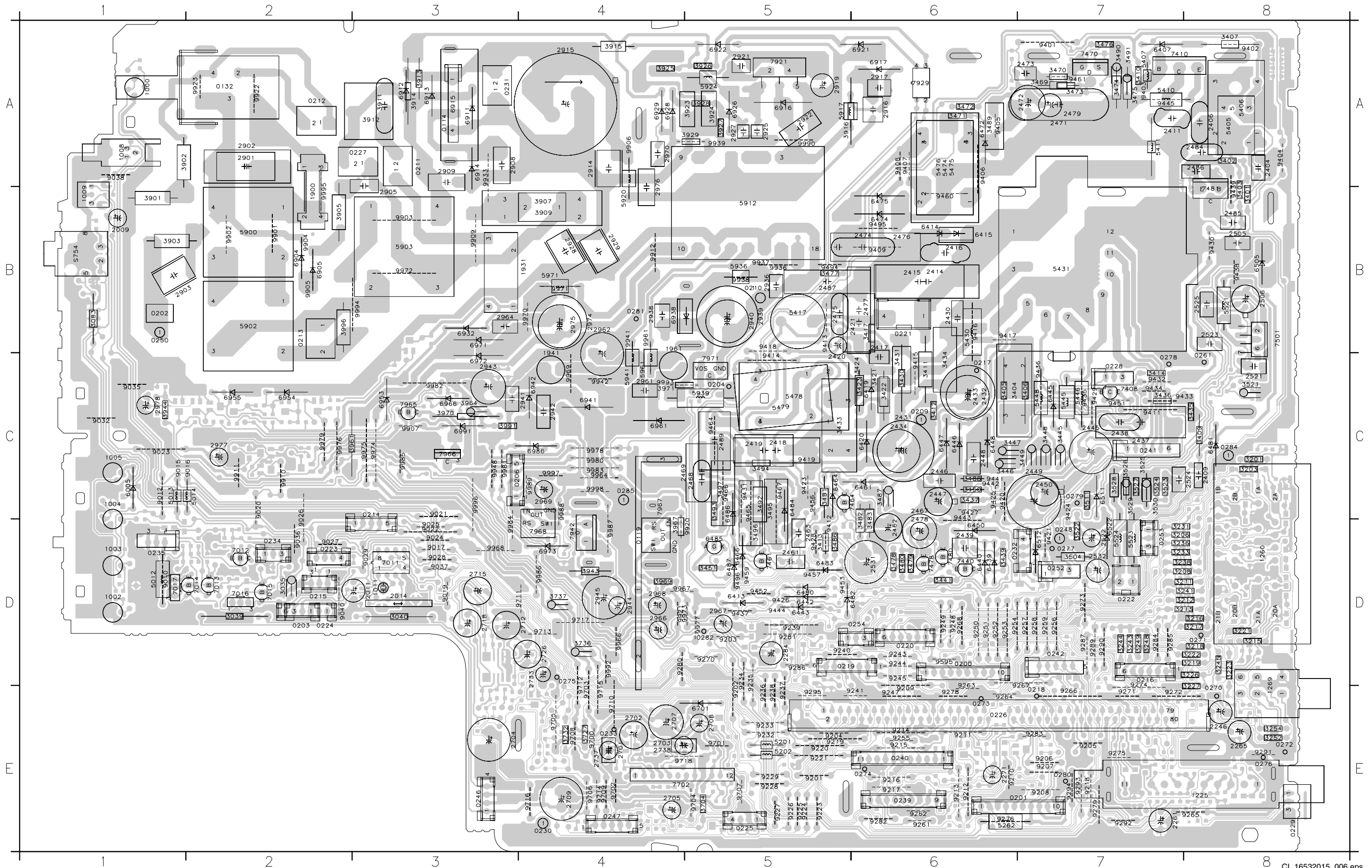
Front Control / Rotation / Headphone

A7 FRONT CONTROL / ROTATION / HEADPHONE



- 0214 B5
- 0215 B2
- 0223 C6
- 0224 D8
- 0234 E6
- 0235 E2
- 1000 C3
- 1002 C4
- 1003 C4
- 1004 C4
- 1005 C5
- 1008 C5
- 1009 B7
- 1020 F9
- 1021 E8
- 1022 F9
- 2009 B6
- 2012 B3
- 2020 F3
- 2021 F4
- 2023 F6
- 2024 F6
- 2081 F9
- 2082 F10
- 3002 B4
- 3003 C5
- 3004 B5
- 3007 B5
- 3021 B3
- 3022 B3
- 3023 B4
- 3024 E3
- 3025 E3
- 3026 F3
- 3027 E4
- 3028 F4
- 3029 F4
- 3030 E5
- 3031 D5
- 3032 E5
- 3033 F4
- 3034 D6
- 3035 D6
- 3037 C9
- 3038 C9
- 3081 F9
- 3082 F10
- 3083 E10
- 3084 E10
- 4010 F4
- 4011 E5
- 5001 E11
- 5002 F11
- 5012 F5
- 5013 E10
- 5014 F10
- 6005 C5
- 6010 E6
- 6081 F10
- 6082 F10
- 6083 F10
- 6084 F10
- 7012 E3
- 7013 E4
- 7014 F6
- 7015 E6
- 7016 D6
- 7017 F5
- 9010 F6
- 9015 E10
- 9016 F10
- 9021 C7
- 9022 C7
- S754 F9

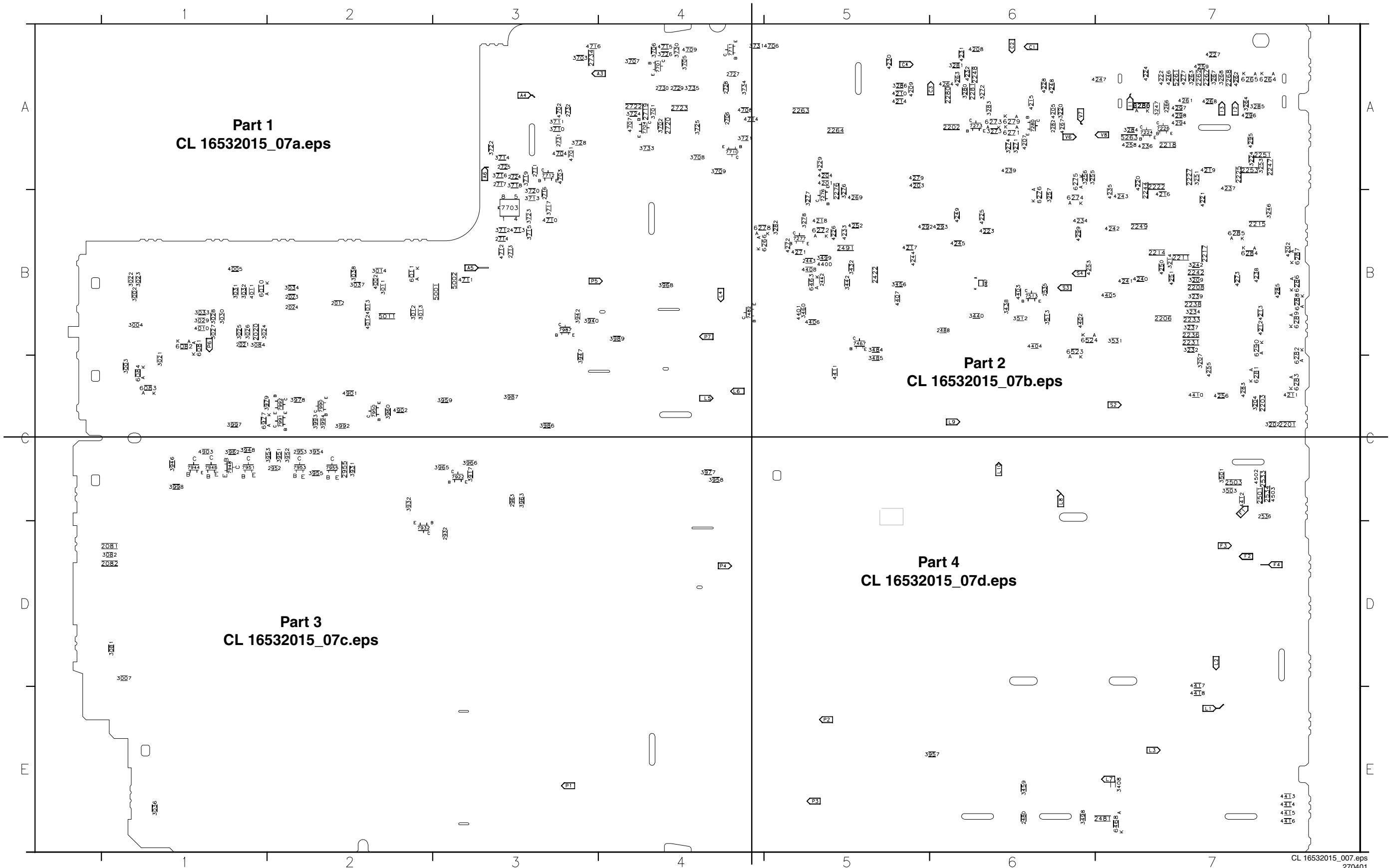
Layout LSP (Top View)







Layout LSP (Overview Bottom View)

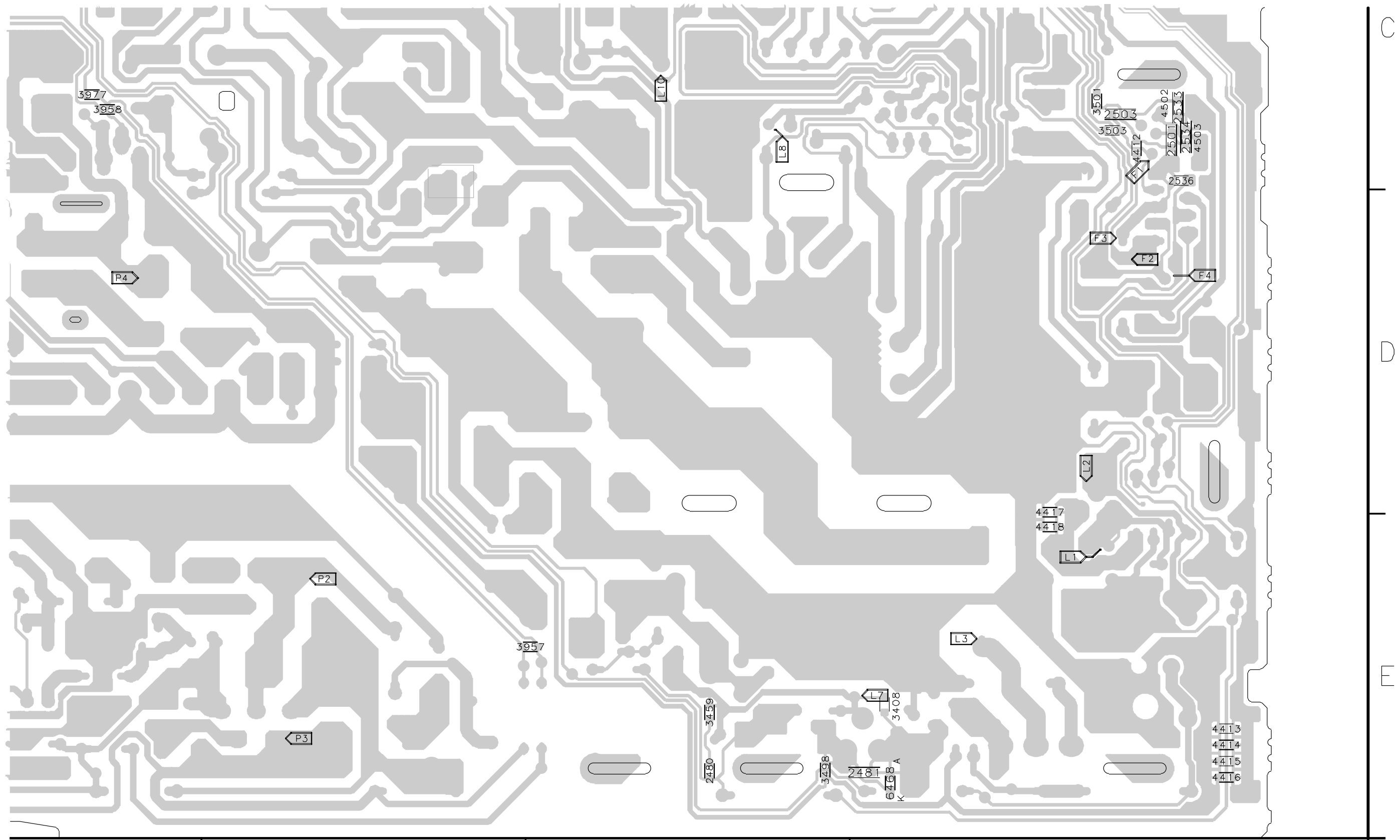








Layout LSP (Part 4 Bottom View)



4

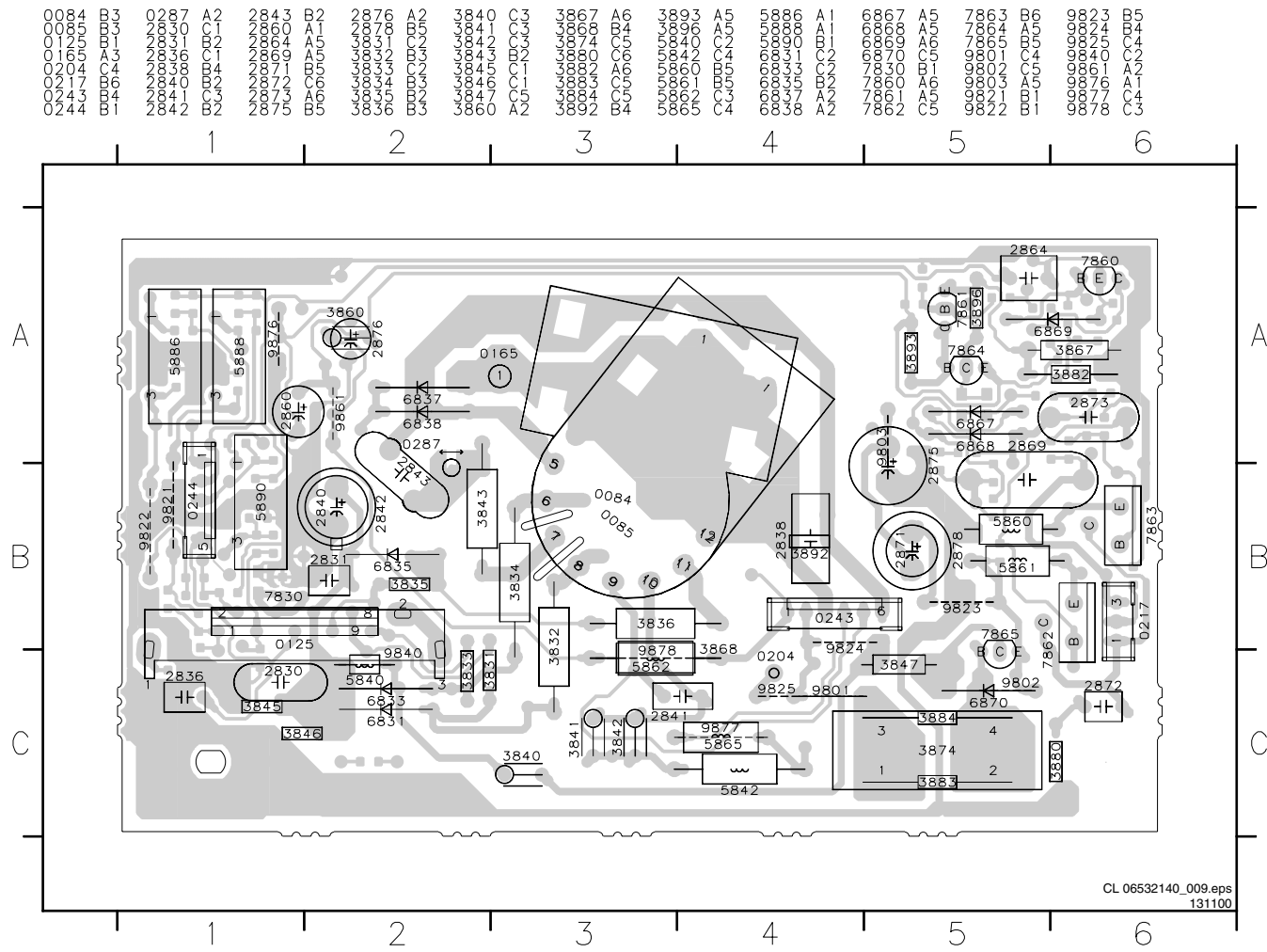
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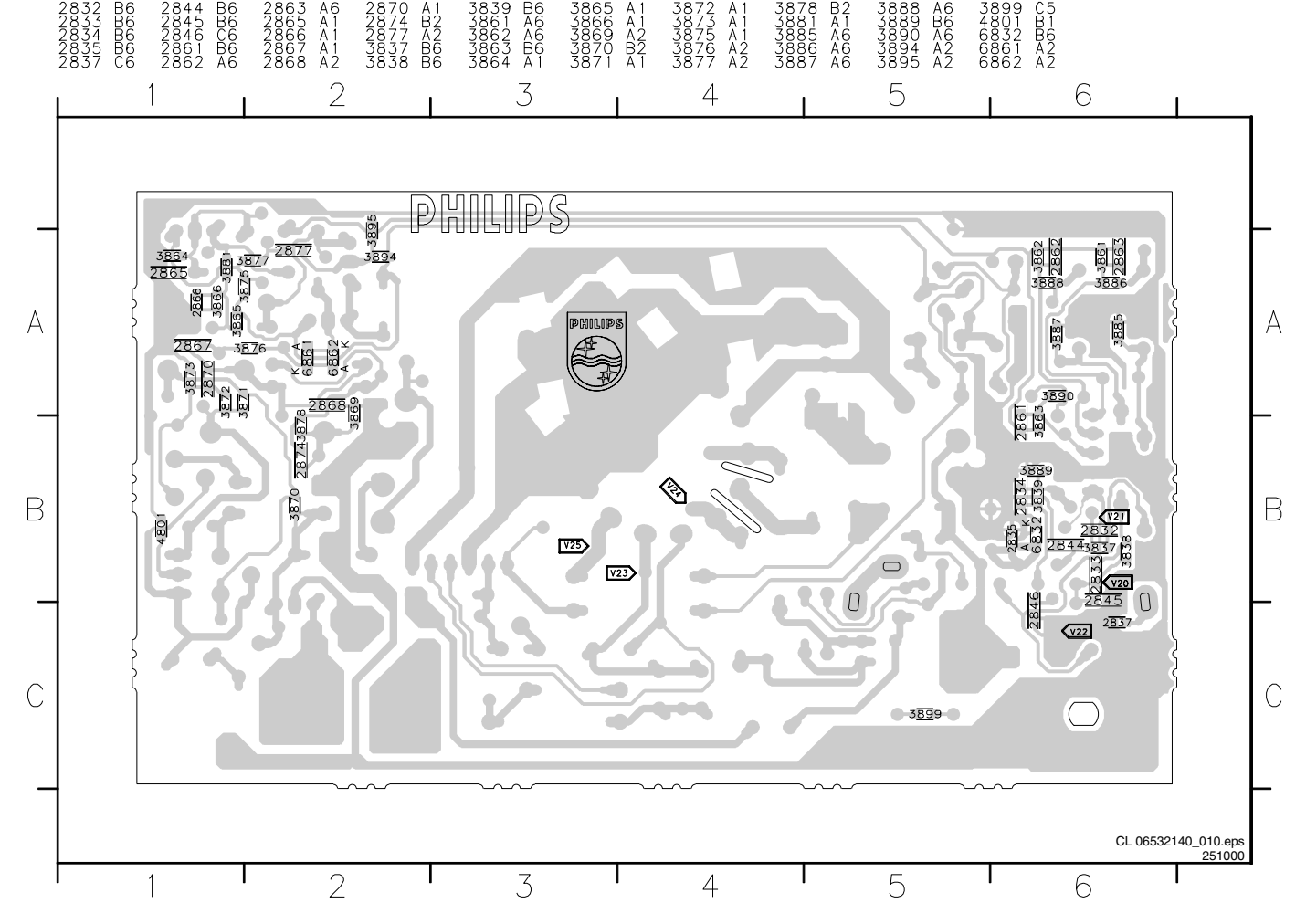
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Layout CRT Panel (Top View)



Layout CRT Panel (Bottom View)





## Alignments

**Note:** The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5.

### General Alignment conditions

All electrical adjustments should be performed under the following conditions:

- Supply voltage: 220 V ( $\pm 10\%$ ); 50 Hz ( $\pm 5\%$ ).
- Warm-up time:  $\approx 20$  minutes.
- The voltages and oscillograms are measured in relation to the tuner earth (with exception of the voltages on the primary side of the power supply). Never use the cooling fins / plates as ground.
- Test probe:  $R_i > 10\text{ M}\Omega$ ;  $C_i < 2.5\text{ pF}$ .
- Use an **isolated** trimmer / screwdriver for the alignments.

### Electrical Alignments

#### Vg2

##### Rough Method

Using a pattern-generator displaying a black pattern.

1. Set CONTRAST to 0.
2. Set BRIGHTNESS to minimum in a black room (OSD still visible). Select any of the AV-sources.
3. Go to the SAM.
4. Set VSD to ON.
5. Adjust the Vg2 potmeter of the LOT until the horizontal line is just visible.
6. Set VSD to OFF.
7. Exit SAM.

##### Accurate Method

1. Activate the SAM-menu (see A10A manual chapter 5.2.2). Go to the sub-menu 'WHITE TONE' and adjust the value of NORMAL RED, GREEN and BLUE to 40 (or 42 for 29" RF).
2. Go, via the MENU key, temporarily to the normal user menu and set the values of BRIGHTNESS and CONTRAST to minimum (OSD just visible).
3. Return to the SAM-menu via the MENU-key. Disable the black current loop by changing 'AKB' to 'OFF'.
4. Connect the RF-output of the pattern generator to the antenna-input. Test pattern is a 'black' pattern (blank screen on CRT **without** any OSD info).  
Set the time base of the oscilloscope to 0.5 ms with external triggering on the vertical pulse. Measure the black level pulse during the vertical flyback at the RGB cathodes of the CRT.

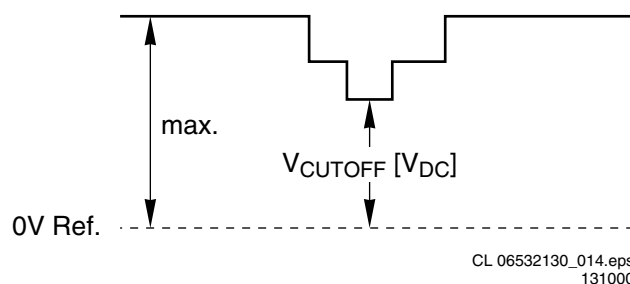


Figure 1

Adjust  $V_{cutoff}$  of the highest of the three guns (with the Vg2 potmeter of the LOT) to:

- 160  $V_{DC}$  for 24", 25" and 28" BLD WS sets,
- 165  $V_{DC}$  for 28"/32" BLSW, 28" RFW and 29" RF sets.

#### Focus

1. Tune the set to a circle or crosshatch test pattern (use an external video pattern generator).
2. Adjust the Focus potmeter until the vertical lines at 2/3 from east and west, at the height of the centre line, are of minimum width without visible haze.

## Alignments And Settings In The SAM.

### General

With the software alignments of the Service Alignment Mode the Tuner, White tone, Geometry, Sound and Smart Settings can be aligned. Put the set in the SAM mode. The SAM menu will now appear on the screen (see A10A manual chapter 5). Menu navigation is done with the 'CURSOR UP, DOWN, LEFT or RIGHT' keys of the RC-handset.

### Tuner (Large Signal Panel And Double Window)

#### IF PLL OFFSET And AFC WINDOW

No adjustments needed for these alignments. The default values for these options are:

- IF PLL OFFSET: 32
- AFC WINDOW: 100 kHz

### AGC

Set an external pattern generator (e.g. PM5418) to a grey scale video signal and connect it to the aerial input with RF signal. Set the signal amplitude to at least 1 mV and to a frequency of 475.25 MHz for PAL.

1. Activate the SAM-menu. Go to the sub-menu TUNER, select the sub-menu option AFC WINDOW and adjust the value to 100kHz.
2. Select the AGC sub-menu.
3. Connect a DC multi-meter to pin 1 of the tuner (1225).
4. Adjust the AGC until the voltage at pin 1 of the tuner is within 2.5 V < AGC takeover voltage < 3.8 V.
5. The value can be incremented or decremented by pressing the RIGHT/LEFT cursor keys on the RC.
6. Switch the set to standby.

### White Tone

In the WHITE TONE sub menu, the colour temperature values can be changed.

The colour temperature mode (NORMAL, DELTA COOL, DELTA WARM) and the colour (R, G, B) can be selected with the UP/DOWN cursor keys. The mode or value can be changed with the RIGHT/LEFT cursor keys.

First set the values for the NORMAL colour temperature. Then set the offset values for the DELTA COOL and DELTA WARM modes.

Following default values can be used:

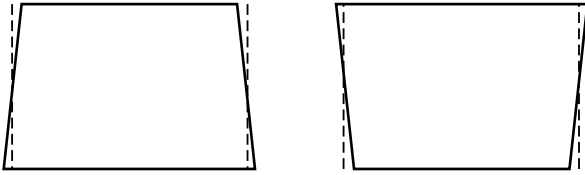
- **NORMAL:**  
RED = 32,  
GREEN = 32  
BLUE = 32.
- **DELTA COOL:**  
RED = 0,  
GREEN = 2  
BLUE = 9.
- **DELTA WARM:**  
RED = 0,  
GREEN = -3  
BLUE = -11.
- CATHODE DR = 7.

### Geometry

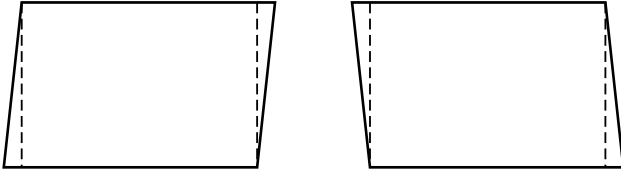
The geometry alignments menu contains several items to align the set, in order to obtain a correct picture geometry.

In widescreen sets, the 'SUPER WIDE' menu is available for separate alignments of the superwide (panorama) mode.

East/West Trapezium



Horizontal Parallelogram



Horizontal Bow

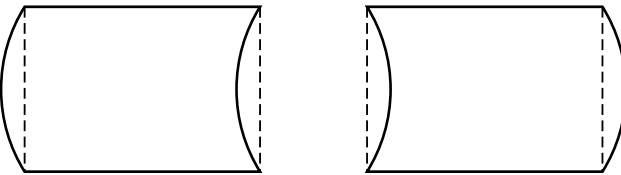
CL 96532156\_012.eps  
190101

Figure 2

**Initial Set-Up**

1. Connect an external video pattern generator (PAL-475.25 MHz) to the aerial input of the TV-set with a crosshatch test pattern.
2. Set SMART PICTURE to NATURAL.
3. Activate the SAM-menu and select GEOMETRY.
4. Set VER.SCOR to value:
  - '8' for 28" WS picture tubes,
  - '13' for 25", 28", 29", 32" and 34" 4:3 picture tubes,
  - '23' for 29" SF picture tubes.
5. Set VER.ZOOM to value:
  - 25 (for widescreens; set in SUPER WIDE mode to 35).

**Alignment Sequence**

- For all sets:
  1. Set SERV.BLK to ON
  2. Adjust VER.SLOPE
  3. Set SERV.BLK to OFF
  4. Adjust VER.AMPL and VER.SHIFT
  5. Adjust EW.WIDTH and HOR.SHIFT
  6. Adjust EW.PARA
  7. Adjust EW.UCORN and EW.LCORN
  8. Adjust EW.TRAP
  9. Adjust HOR.BOW and HOR.PARALLEL
- For widescreen sets only (go to super wide mode):
  1. Set SERV.BLK to ON
  2. Adjust VER.SLOPE
  3. Set SERV.BLK to OFF
  4. Adjust EW.WIDTH and HOR.SHIFT
  5. Adjust EW.PARA
  6. Adjust EW.UCORN and EW.LCORN
  7. Adjust EW.TRAP
  8. Adjust HOR.BOW and HOR.PARALLEL

Align the vertical centre of the picture to the vertical centre of the CRT. This is the first alignment to be performed of the vertical alignments. For an easy alignment set SERV.BLK to ON.

- *Vertical S-correction (VER. SCOR)*  
Align the vertical linearity, meaning that vertical intervals of a grid-pattern must be equal over the entire height.
- *Vertical amplitude (VER. AMPL)*  
Align the picture height so that the complete test pattern is visible. Note that other vertical alignments are not compensated.
- *Vertical shift (VER. SHIFT)*  
Align the vertical centering so that the test pattern is located vertically in the middle. Repeat the 'vertical amplitude' alignment if necessary.
- *Horizontal shift (HOR. SHIFT)*  
Align the horizontal centre of the picture to the horizontal centre of the CRT.
- *Horizontal parallelogram (HOR. PARALLEL)*  
Align straight vertical lines in the top and the bottom; vertical rotation around the centre.
- *East West width (EW. WIDTH)*  
Align the picture width until the complete test pattern is visible.
- *East West Upper Corner (EW. UCORN)*  
Align straight vertical lines in the upper corners of the screen.
- *East West Lower Corner (EW. LCORN)*  
Align straight vertical lines in the lower corners of the screen.
- *East West Trapezium (EW. TRAP)*  
Align straight vertical lines in the middle of the screen.
- *East West parabola (EW. PARA)*  
Align straight vertical lines at the sides of the screen.
- *Horizontal bow (HOR. BOW)*  
Align straight horizontal lines in the top and the bottom; horizontal rotation around the centre.

When a NTSC signal is used on one of the **EXTERNAL** inputs, the following additional alignments can be performed to correct the picture (descriptions above):

1. Horizontal width 60 Hz (H60. WIDTH)
2. Horizontal parallelogram 60Hz (H60. PARA)
3. Horizontal shift 60 Hz (H60. SHIFT)
4. Vertical amplitude 60 Hz (V60. AMPL)

**Sound**

There are no adjustments needed for SOUND.

Default values:

- NIC-FMAM = 250
- 2CS-FM = 40
- PS-FM = 27
- PS-NIC-BGDK = 58
- PS-NIC-I = 127
- PS-NIC-L = 58
- DEVIATION = OFF

**Explanation of terminology**

- *Service blanking (SERV. BLK)*  
Switch the blanking of the lower half of the screen ON/OFF (to be used in combination with the vertical slope alignment).
- *Vertical slope (VER. SLOPE)*

## Smart Settings

SMART SETTINGS DEFAULT VALUES		
CRT SIZE ->	< 32"	32"
RICH BGT	35	42
RICH COL	35	61
RICH CON	55	84
RICH SHP	55	55
RICH HUE	50	50
NATURAL BGT	30	43
NATURAL COL	21	40
NATURAL CON	49	65
NATURAL SHP	40	40
NATURAL HUE	50	50
SOFT BGT	27	42
SOFT COL	22	42
SOFT CON	32	38
SOFT SHP	20	20
SOFT HUE	50	50
MULTI BGT	27	39
MULTI COL	22	38
MULTI CON	32	55
MULTI SHP	20	20
MULTI HUE	50	50

## Options

## Introduction

Options are used to control the presence/absence of certain features and hardware. The correct option values can be found on a sticker on the picture tube (after removal of the rear cover).

There are two ways to change the option settings:

1. Change a single option  
Select an option with the MENU UP/DOWN keys and change its setting with the MENU LEFT/RIGHT keys.
2. Change multiple options via Option Bytes  
When you change the option bytes directly, it is possible to set all options very fast. An option byte represents a number of different options (see tables below). All options are controlled via 8 option bytes.  
Select the option byte (OB1..OB8). with the MENU UP/DOWN keys and key in the new value.

**Note:**

Changes in the option byte settings are saved automatically after leaving this sub-menu.

Some changes will only take affect after the set has been switched OFF and ON with the mains switch (cold start).

**List Of Options**

These option bits can be set ON (= 1) or OFF (= 0). If an option is set ON, it represents a certain (decimal) value.

To calculate the Option Byte value (OB), add the values of the 8 option bits:

An option byte value is calculated in the following way:

Value 'option bit 1' x 1 =  
 Value 'option bit 2' x 2 =  
 Value 'option bit 3' x 4 =  
 Value 'option bit 4' x 8 =  
 Value 'option bit 5' x 16 =  
 Value 'option bit 6' x 32 =  
 Value 'option bit 7' x 64 =  
 Value 'option bit 8' x 128 =  
 ===== +  
 Total value 'option byte' =

On the next page you'll find the option lists for the 2 software versions, and an explanation table.

SW: A10ET1-x.y	Bit 8 (128)	Bit 7 (64)	Bit 6 (32)	Bit 5 (16)	Bit 4 (8)	Bit 3 (4)	Bit 2 (2)	Bit 1 (1)
OB1	SBNP	C169	E149	HOSP	SMCK	AV3	WSCR	CBFL
OB2	IPIX	IPMU	NTSC	PITN	ACI	ATS	PLST	VMOD
OB3	SOSD	FAPG	UKPNP	DNRM	VMUT	AAVL	ROTI	SNIC
OB4	TMWIN	NPRG	WSSB	INCF	Res.	Res.	Res.	Res.
OB5	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
OB6	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
OB7	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
OB8	Res.	Res.	Res.	Res.	Res.	Res.	SYSTEM	SYSTEM

SW: A10EP1-x.y	Bit 8 (128)	Bit 7 (64)	Bit 6 (32)	Bit 5 (16)	Bit 4 (8)	Bit 3 (4)	Bit 2 (2)	Bit 1 (1)
OB1	SBNP	C169	E149	HOSP	SMCK	AV3	WSCR	CBFL
OB2	IPIX	IPMU	NTSC	VDBY	EPG	P50	PITN	ACI
OB3	ATS	PLST	VMOD	SOSD	FAPG	UKPNP	DTXT	DNRM
OB4	VMUT	AAVL	ROTI	SNIC	TMWIN	NPRG	WSSB	INCF
OB5	APC	Res.	Res.	Res.	Res.	Res.	Res.	Res.
OB6	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
OB7	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
OB8	Res.	Res.	Res.	Res.	Res.	Res.	SYSTEM	SYSTEM

Option abbreviation	Description
AAVL	Automatic Volume Level
ACI	Automatic Channel Installation
APC	Auto Picture Control
ASBY	Auto switch to STDBY after 2 hrs.
ATS	Automatic Tuning System
AUSB	Auto switch to STDBY after 2 hrs.
AV3	External 3 (Side I/O)
BLMU	Blue Mute
C169	Picture setting for Compress 16:9
CBFL	Comb Filter
CCAP	Closed Captioning
CHLK	Child Lock
CHNA	China
CVI	Ext. source selection for DW/PIP
DNRM	DNR Noise Reduction
DTXT	Dual page Teletext available
E149	Picture setting for Expand 14:9
EPG	Electronic Program Guide
FAPG	Favorite Page
HOSP	Hospitality mode
INCF	Internal Comb Filter
IPIX	Incredible Picture
IPMU	Incredible Picture via menu
ISUR	Incredible Surround
MLNK	M-Link
NPRG	Max. number of programs (80/100)
NTSC	NTSC playback
NVM	Power down circuit to protect NVM
P50	Easy Link
PIPC	PIP Control
PIPS	PIP Surf
PIPT	PIP Tuner

Option abbreviation	Description
PITN	Philips Tuner present
PLST	Program List
ROTI	Rotation
SBNP	Auto Standby with no picture
SMCK	Smart clock
SNIC	Sound IC 3451
SOSD	Smart OSD
SURF	Surf
SYSTEM	EW=West-, EE=East-, EM=Mid-EU
TIME	Timer
TMWIN	Time Window
UKPNP	UK plug and play
VDBY	Virtual Dolby
VMUT	Video Mute
VMOD	Virgin mode
VSLC	Vertical Slicing
W169	Double Window 16:9
W4X3	Double Window 4:3
WSCR	Wide screen
WSSB	Wide screen signalling bit

## Spare Parts List

## A10E LSP

## Various

0084▲	2422 500 80052	Con 9P
0084▲	2422 500 80061	Con 9P
0127▲	3122 358 72141	Fuse holder
0132▲	4822 276 14024	Mains switch
0137	4822 492 70789	Transistor fixation
0138	4822 492 70789	Transistor fixation
0139	4822 492 70788	IC fixation
0140	4822 492 70789	Transistor fixation
0141	4822 492 70788	IC fixation
0144	4822 492 70789	Transistor fixation
0188	3122 224 04242	Heatsink clamp bracket
0189	3139 124 33361	SSB Bracket
0211▲	4822 267 10774	Con 2P
0212▲	4822 265 20723	Con 2P
0212▲	4822 267 10775	Con 2P
0214	4822 267 10734	Con 5P
0215	2422 025 16382	Con 3P
0215	4822 267 10735	Con 3P
0217	4822 267 10735	Con 3P
0221▲	4822 267 10966	Con 2P
0222	2422 025 10646	Con 2P
0226	2422 025 16599	Con 80P
0229▲	2422 025 16601	Con 3P
0232	4822 267 10565	Con 4P
0234	4822 267 10735	Con 3P
0235	2422 025 04851	Con 3P
0238	4822 267 10735	Con 3P
0240	2422 025 12485	Con 11P
0241	2422 025 04854	Con 6P
0242	4822 265 30735	Con 5P
0243	2422 025 04854	Con 6P
0244	4822 265 30735	Con 5P
0246	4822 267 10565	Con 4P
0247	4822 267 10734	Con 5P
0252	2422 025 04851	Con 3P
0253	4822 267 10735	Con 3P
0254	4822 267 10735	Con 3P
1002	4822 276 13775	Switch
1003	4822 276 13775	Switch
1004	4822 276 13775	Switch
1005	4822 276 13775	Switch
1008▲	4822 130 10859	TLDR5400
1009	9322 127 54667	IR Receiver
		TSOP1836UH1
1225	4822 210 10848	UV1316/A I U-2
1225	4822 210 10853	TEDE9-004A
1260	2422 025 16745	Con 42P
1269	4822 267 10982	Con 2P
1754	4822 267 31014	Headphone socket
1900▲	2422 086 10905	Fuse 4A
1931	4822 280 10367	Con 1P
1941▲	4822 071 51602	Fuse 1.6A
1961▲	4822 071 51602	Fuse 1.6A

## -II-

2009	4822 124 40207	100µF 20% 25V
2012	4822 126 14585	100nF 10% 50V
2020	4822 122 33177	10nF 20% 50V
2021	4822 122 33172	390pF 5% 50V
2023	4822 126 14043	1µF 20% 16V
2024	4822 126 14043	1µF 20% 16V
2081	4822 122 33177	10nF 20% 50V
2082	4822 122 33177	10nF 20% 50V
2201	5322 122 31863	63V 330pF 5%
2202	4822 126 13692	47pF 1% 63V
2203	5322 122 31863	63V 330pF 5%
2206	5322 122 31863	63V 330pF 5%
2208	5322 122 31863	63V 330pF 5%
2211	5322 122 32658	22pF 5% 50V
2214	5322 122 31863	63V 330pF 5%
2215	5322 122 31863	63V 330pF 5%
2217	5322 122 32658	22pF 5% 50V
2218	5322 122 32658	22pF 5% 50V
2222	5322 122 32658	22pF 5% 50V
2225	5322 122 32658	22pF 5% 50V
2227	4822 122 33575	220pF 5% 63V
2231	5322 122 31863	63V 330pF 5%
2233	5322 122 31863	63V 330pF 5%
2236	5322 122 31863	63V 330pF 5%
2238	5322 122 31863	63V 330pF 5%
2242	5322 122 31863	63V 330pF 5%
2244	5322 122 31863	63V 330pF 5%
2246	4822 124 81286	47µF 20% 16V

2247	5322 122 32658	22pF 5% 50V
2248	5322 126 10223	4.7nF 10% 63V
2249	4822 122 33575	220pF 5% 63V
2251	5322 122 31863	63V 330pF 5%
2253	5322 122 31863	63V 330pF 5%
2261	4822 124 40196	220µF 20% 16V
2262	5322 122 31647	1nF 10% 63V
2265	4822 124 41643	100µF 20% 16V
2265	4822 124 81044	470µF 20% 6,3V
2266	2238 580 15645	50V 47nF 10% R
2271	4822 124 21913	1µF 20% 63V
2276	5322 126 10511	1nF 5% 50V
2280	5322 122 32531	100pF 5% 50V
2281	4822 122 33575	220pF 5% 63V
2281	4822 126 13486	15pF 2% 63V
2282	2238 580 15645	50V 47nF 10% R
2282	4822 126 13751	47nF 10% 63V
2284	4822 124 40207	100µF 20% 25V
2404▲	4822 122 31177	470pF 10% 500V
2406	4822 121 43526	47nF 5% 250V
2409	5322 121 42386	100nF 5% 63V
2411▲	2020 558 90491	1,8nF 10% 2KV
2411▲	4822 126 13435	1,2nF 10% 2KV
2411▲	4822 126 13451	2,2nF 10% 2KV
2411▲	4822 126 13862	1,8nF 10% 2KV
2411▲	4822 126 14053	1nF 10% 2KV
2414▲	4822 121 70618	12nF 5% 1600V
2415▲	4822 121 70434	11nF 5% 1600V
2415▲	4822 121 70617	10nF 5% 1600V
2415▲	4822 121 70618	12nF 5% 1600V
2416▲	2020 558 90491	1,8nF 10% 2KV
2416▲	4822 126 11503	820pF 10% 2KV
2416▲	4822 126 13435	1,2nF 10% 2KV
2416▲	4822 126 13451	2,2nF 10% 2KV
2416▲	4822 126 14053	1nF 10% 2KV
2417▲	4822 122 31177	470pF 10% 500V
2418	2222 479 90029	820pF 5% 250V
2418	4822 126 14097	680nF 5% 250V
2419	4822 121 10518	390nF 5% 250V
2419	4822 121 10781	470nF 5% 250V
2419	4822 126 14097	680nF 5% 250V
2420	4822 124 12265	4,7µF 20% 250V
2420	4822 124 41741	2,2µF 20% 350V
2421▲	2222 479 90022	0.43µF 250V
2421▲	4822 121 10781	470nF 5% 250V
2422	4822 126 13751	47nF 10% 63V
2430	4822 121 41857	10nF 5% 250V
2430	4822 121 70676	27P 10% 50V
2434▲	2020 021 91543	47µF 20% 160V
2437	4822 121 10619	220nF 10% 250V
2437	4822 121 40472	150nF 10% 250V
2437	4822 121 40518	100nF 10% 250V
2437	4822 121 42605	180nF 10% 250V
2439	4822 121 51252	470nF 5% 63V
2442	4822 126 13838	100nF 25V 20%
2443	4822 126 13838	100nF 25V 20%
2445	2020 012 93596	22µF 20% 250V
2447	4822 124 80791	470µF 16V 20%
2449	4822 124 80791	470µF 16V 20%
2450	4822 124 80791	470µF 16V 20%
2461	5322 121 42386	100nF 5% 63V
2462	4822 124 40255	100µF 20% 63V
2463	5322 121 42386	100nF 5% 63V
2468	5322 121 40323	100nF 10% 100V
2469	2222 479 90014	0.22µF 250V
2469	2222 479 90166	68nF 5% 400V
2473▲	4822 122 31177	470pF 10% 500V
2474▲	4822 121 43288	18nF 10% 630V
2474▲	4822 121 70545	7,5nF 5% 1600V
2475	4822 121 43526	47nF 5% 250V
2476▲	4822 121 70545	7,5nF 5% 1600V
2476▲	4822 121 70637	8,2nF 5% 1600V
2476▲	4822 121 70649	9,1nF 5% 1600V
2477	2222 479 90022	0.43µF 250V
2478	5322 121 10472	47µF 25V
2479	4822 124 80341	1µF 20% 160V
2479	4822 124 81043	10µF 20% 100V
2484	4822 121 43526	47nF 5% 250V
2485▲	4822 126 10206	2,2nF 10% 500V
2487▲	4822 121 70545	7,5nF 5% 1600V
2487▲	4822 121 70649	9,1nF 5% 1600V
2488	4822 126 14584	1µF 20% 16V
2488	4822 126 14585	100nF 10% 50V
2488	5322 126 10511	1nF 5% 50V
2489	2222 479 90014	0.22µF 250V
2491	4822 126 14076	220nF 25V
2501	4822 126 10847	63V 1N8 10%
2501	5322 122 32268	63V 470P 5%
2503	4822 126 10847	63V 1N8 10%

2503	5322 122 32268	63V 470P 5%
2505	5322 121 42386	100nF 5% 63V
2506	4822 124 40255	100µF 20% 63V
2521	4822 121 42408	220nF 5% 63V
2522	4822 124 40207	100µF 20% 25V
2522	4822 124 40255	100µF 20% 63V
2522	4822 124 41407	0,47µF 20% 63V
2523	5322 121 42386	100nF 5% 63V
2524	5322 121 42386	100nF 5% 63V
2531	4822 124 40784	3300µF 20% 16V
2532	4822 124 21913	1µF 20% 63V
2536	4822 126 14335	1nF 10% 100V
2701	4822 124 22652	2,2µF 20% 50V
2701	5322 124 41379	2,2µF 20% 50V
2702	4822 124 40255	100µF 20% 63V
2703	4822 124 22652	2,2µF 20% 50V
2703	5322 124 41379	2,2µF 20% 50V
2704	4822 124 12056	1000µF 20% 35V
2705	4822 124 21913	1µF 20% 63V
2706	4822 126 13838	100nF 25V 20%
2707	4822 123 14026	470µF 35V 20%
2708	4822 124 21913	1µF 20% 63V
2709	4822 124 12056	1000µF 20% 35V
2711	4822 126 13482	470nF 80/20% 16V
2711	4822 126 14491	2,2µF 10V
2712	4822 124 40255	100µF 20% 63V
2713	4822 126 13838	100nF 25V 20%
2714	5322 122 32531	100pF 5% 50V
2714	5322 126 10511	1nF 5% 50V
2715	4822 124 40255	100µF 20% 63V
2716	4822 126 13482	470nF 80/20% 16V
2716	4822 126 14491	2,2µF 10V
2717	5322 122 32531	100pF 5% 50V
2717	5322 126 10511	1nF 5% 50V
2718	4822 124 40255	100µF 20% 63V
2719	5322 122 31647	1nF 10% 63V
2720	5322 122 31647	1nF 10% 63V
2722	4822 122 33127	2,2nF 10% 63V
2723	4822 122 33127	2,2nF 10% 63V
2726	4822 124 40255	100µF 20% 63V
2727	5322 122 32654	22nF 10% 63V
2728	5322 122 32654	22nF 10% 63V
2729	5322 122 32654	22nF 10% 63V
2730	5322 122 32654	22nF 10% 63V
2731	4822 126 14043	1µF 20% 16V
2732	4822 126 14043	1µF 20% 16V
2733	4822 124 11947	10µF 20% 16V
2734	5322 126 10223	4,7nF 10% 63V
2830	4822 121 51473	470nF 20% 63V
2831	4822 126 13599	3,3nF 10% 500V
2832	4822 126 13694	68pF 1% 63V
2833	4822 126 13694	68pF 1% 63V
2834	4822 126 13694	68pF 1% 63V
2835	4822 126 13838	100nF 25V 20%
2836	4822 121 43897	1nF 5% 400V
2840	4822 124 11565	10µF 20% 250V
2843▲	4822 126 13451	2,2nF 10% 2KV
2860	4822 124 40207	100µF 20% 25V
2866	4822 126 13482	470nF 16V
2869	4822 121 40334	100nF 10% 100V
2870	5322 122 32654	22nF 10% 63V
2871	4822 124 40764	22µF 100 V
2872▲	4822 122 40112	560pF 10% 500V
2873	4822 121 40516	22nF 10% 250V
2877	5322 122 32658	22pF 5% 50V
2878	5322 126 10733	680pF 5% 50V
2902▲	4822 126 13589	470P 275V
2905	4822 121 70141	33nF 5% 400V
2908	4822 126 14153	2,2nF 10%B 1KV
2909	4822 126 12263	220pF 10% 2KV
2909	4822 126 14153	2,2nF 10%B 1KV
2915▲	4822 124 12415	220µF 20% 400V
2919	2020 021 90654	47µF 20% 50V
2919	4822 124 80604	47µF 20% 50V
2921	5322 122 32311	470pF 10% 100V
2922	4822 126 13862	1,5nF 10% 2KV
2925	5322 122 32311	470p

2942	4822 121 42408	220nF 5% 63V	3252	4822 116 83868	150Ω 5% 0,5W	3494	4822 116 52264	27k 5% 0,5W
2943	4822 124 40784	3300μF 20% 16V	3253	4822 117 13579	220k 1% 0,1W	3494	4822 116 83882	39k 5% 0,5W
2944	4822 124 40433	47μF 20% 25V	3254	4822 116 83868	150Ω 5% 0,5W	3495	3198 012 32280	2Ω2 5% 3W
2945	4822 124 81144	1000μF 16V	3255	4822 051 20479	47Ω 5% 0,1W	3496	3198 012 32280	2Ω2 5% 3W
2952	4822 126 14585	100nF 10% 50V	3256	4822 051 20479	47Ω 5% 0,1W	3497	3198 012 32280	2Ω2 5% 3W
2953	4822 126 13751	47nF 10% 63V	3257	4822 051 20479	47Ω 5% 0,1W	3498	4822 117 10837	100k 1% 0,1W
2955	4822 122 33336	8,2nF 10% 50V	3263	4822 051 10102	1k 2% 0,25W	3498	4822 117 11149	82k 1% 0,1W
2961	4822 122 31175	1nF 10% 500V	3263	4822 117 11449	2k2 5% 0,1W	3499	4822 117 13579	220k 1% 0,1W
2962	2020 021 91501	4700μF 20% 10V	3264	4822 117 10833	10k 1% 0,1W	3501	4822 051 10102	1k 2% 0,25W
2962	4822 124 11878	4700μF 16V	3267	4822 051 20109	10Ω 5% 0,1W	3503	4822 051 10102	1k 2% 0,25W
2962	4822 124 80061	1000μF 20% 25V	3267	4822 051 20479	47Ω 5% 0,1W	3504	4822 050 22202	2k2 1% 0,6W
2963	2238 780 15654	220nF 10% 16V	3268	4822 051 20109	10Ω 5% 0,1W	3504	4822 116 52256	2k2 5% 0,5W
2963	4822 126 13561	220nF 10% 16V	3268	4822 051 20479	47Ω 5% 0,1W	3511	4822 116 52283	4k7 5% 0,5W
2964	4822 122 31175	1nF 10% 500V	3271	4822 051 20333	33k 5% 0,1W	3512	4822 117 10833	10k 1% 0,1W
2966	4822 124 41584	100μF 20% 10V	3271	4822 117 11149	82k 1% 0,1W	3513	4822 117 10833	10k 1% 0,1W
2967	4822 124 41584	100μF 20% 10V	3272	4822 117 10833	10k 1% 0,1W	3521▲	4822 052 10158	1Ω5 5% 0,33W
2970	5322 122 32331	1nF 10% 100V	3272	4822 117 11449	2k2 5% 0,1W	3522	4822 050 21003	10k 1% 0,6W
2974	4822 124 11583	2200μF 20% 35V	3273	4822 051 20223	22k 5% 0,1W	3522	4822 116 83866	1MΩ 5% 0,5W
2974	4822 124 12056	1000μF 20% 35V	3274	4822 051 20154	150k 5% 0,1W	3523	4822 116 52175	100Ω 5% 0,5W
2977	4822 124 41584	100μF 20% 10V	3276	4822 117 10833	10k 1% 0,1W	3524	4822 116 52175	100Ω 5% 0,5W
			3276	4822 117 11449	2k2 5% 0,1W	3525	4822 050 24708	4Ω7 1% 0,6W
			3277	4822 051 20101	100Ω 5% 0,1W	3525	4822 116 81154	2Ω2 5% 0,5W
			3277	4822 117 11373	100Ω 1% 0,1W	3525	5322 116 53564	3Ω3 5% 0,5W
			3278	4822 117 11503	220Ω 1% 0,1W	3526	4822 050 24708	4Ω7 1% 0,6W
			3280	4822 051 20333	33k 5% 0,1W	3526	5322 116 53564	3Ω3 5% 0,5W
			3281	4822 051 20472	4k7 5% 0,1W	3527	4822 116 81039	1Ω8 5% 0,5W
			3282	4822 117 10834	47k 1% 0,1W	3527	5322 116 53564	3Ω3 5% 0,5W
			3286	4822 051 20182	1k8 5% 0,1W	3528	4822 050 22202	2k2 1% 0,6W
			3401	4822 116 52175	100Ω 5% 0,5W	3528	4822 116 52256	2k2 5% 0,5W
			3402	4822 050 11002	1k 1% 0,4W	3531	4822 051 20688	6Ω8 5% 0,1W
			3403	4822 116 52269	3k3 5% 0,5W	3701	4822 051 20472	4k7 5% 0,1W
			3405	4822 117 12473	4k7 5% 5W	3701	4822 051 20562	5k6 5% 0,1W
			3405	4822 117 12514	6k8 5% 5W	3702	4822 051 20472	4k7 5% 0,1W
			3405	4822 117 12517	5k6 5% 5W	3702	4822 051 20562	5k6 5% 0,1W
			3409	2322 193 53333	33k 5%	3703	4822 117 11449	2k2 5% 0,1W
			3409	4822 053 10333	33k 5% 1W	3704	4822 116 52291	56k 5% 0,5W
			3410	4822 116 52191	33Ω 5% 0,5W	3705	4822 051 20182	1k8 5% 0,1W
			3411	4822 053 21334	330k 5% 0,5W	3705	4822 051 20471	470Ω 5% 0,1W
			3412	4822 116 52234	100k 5% 0,5W	3706	4822 117 10833	10k 1% 0,1W
			3412	4822 116 52251	18k 5% 0,5W	3707	4822 117 10833	10k 1% 0,1W
			3414	4822 116 52234	100k 5% 0,5W	3708	4822 117 10837	100k 1% 0,1W
			3417	4822 116 52228	680Ω 5% 0,5W	3709	4822 117 11503	220Ω 1% 0,1W
			3422	3198 012 11030	10k 5% 1W	3710	4822 051 20392	3k9 5% 0,1W
			3422	4822 053 10103	10k 5% 1W	3710	4822 117 10833	10k 1% 0,1W
			3430	4822 053 12339	33Ω 5% 3W	3711	4822 051 20392	3k9 5% 0,1W
			3430	4822 053 12689	68Ω 5% 3W	3711	4822 117 10833	10k 1% 0,1W
			3432	4822 051 20824	820k 5% 0,1W	3712	4822 051 20822	8k2 5% 0,1W
			3434	4822 053 12689	68Ω 5% 3W	3713	4822 051 20223	22k 5% 0,1W
			3435	4822 116 52264	27k 5% 0,5W	3713	4822 117 11139	1k5 1% 0,1W
			3435	4822 116 83882	39k 5% 0,5W	3715	4822 051 20332	3k3 5% 0,1W
			3435	4822 116 83884	47k 5% 0,5W	3716	4822 051 20822	8k2 5% 0,1W
			3436	4822 116 52291	56k 5% 0,5W	3717	4822 117 11139	1k5 1% 0,1W
			3436	4822 116 52297	68k 5% 0,5W	3717	4822 117 12955	2k7 1% 0,1W
			3436	4822 116 83882	39k 5% 0,5W	3719	4822 117 12955	2k7 1% 0,1W
			3436	4822 116 83884	47k 5% 0,5W	3720	4822 051 10102	1k 2% 0,25W
			3437	4822 050 23303	33k 1% 0,6W	3720	4822 051 20332	3k3 5% 0,1W
			3437	4822 116 52257	22k 5% 0,5W	3721	4822 117 10837	100k 1% 0,1W
			3438	4822 051 20474	470k 5% 0,1W	3722	4822 117 12955	2k7 1% 0,1W
			3439	4822 050 11002	1k 1% 0,4W	3723	4822 051 20332	3k3 5% 0,1W
			3440	4822 117 10837	100k 1% 0,1W	3724	4822 051 20472	4k7 5% 0,1W
			3441	4822 116 83961	6k8 5%	3724	4822 051 20562	5k6 5% 0,1W
			3442	4822 051 20105	1M 5% 0,1W	3725	4822 051 20472	4k7 5% 0,1W
			3442	4822 051 20564	560k 5% 0,1W	3725	4822 051 20562	5k6 5% 0,1W
			3442	4822 051 20824	820k 5% 0,1W	3726	4822 051 20109	10Ω 5% 0,1W
			3445▲	4822 052 11108	1Ω 5% 0,5W	3727	4822 116 52176	10Ω 5% 0,5W
			3446▲	4822 052 11108	1Ω 5% 0,5W	3728	4822 051 20109	10Ω 5% 0,1W
			3447▲	4822 052 11108	1Ω 5% 0,5W	3730	4822 051 20273	27k 5% 0,1W
			3448▲	4822 052 11108	1Ω 5% 0,5W	3731	4822 051 20273	27k 5% 0,1W
			3449▲	4822 052 11108	1Ω 5% 0,5W	3732	4822 116 52234	100k 5% 0,5W
			3451	4822 116 52234	100k 5% 0,5W	3733	4822 051 20561	560Ω 5% 0,1W
			3451	4822 117 10837	100k 1% 0,1W	3734	4822 051 20478	4Ω7 5% 0,1W
			3456	4822 051 10102	1k 2% 0,25W	3735	4822 051 20478	4Ω7 5% 0,1W
			3470	4822 116 52264	27k 5% 0,5W	3736▲	4822 052 10108	1Ω 5% 0,33W
			3471	4822 116 83883	470Ω 5% 0,5W	3737▲	4822 052 10108	1Ω 5% 0,33W
			3472	4822 050 23303	33k 1% 0,6W	3831	4822 116 52175	100Ω 5% 0,5W
			3472	4822 116 52264	27k 5% 0,5W	3832	3198 013 01020	1k PM2 1/2W
			3472	4822 116 52304	82k 5% 0,5W	3833	4822 116 52175	100Ω 5% 0,5W
			3472	4822 116 83882	39k 5% 0,5W	3834	3198 013 01020	1k PM2 1/2W
			3473	4822 116 52234	100k 5% 0,5W	3835	4822 116 52175	100Ω 5% 0,5W
			3473	4822 116 52304	82k 5% 0,5W	3836	3198 013 01020	1k PM2 1/2W
			3474	4822 050 24708	4Ω7 1% 0,6W	3837	4822 051 20561	560Ω 5% 0,1W
			3475	4822 050 24708	4Ω7 1% 0,6W	3837	4822 117 10361	680Ω 1% 0,1W
			3476	4822 116 52283	4k7 5% 0,5W	3838	4822 051 20561	560Ω 5% 0,1W
			3477	4822 116 52238	12k 5% 0,5W	3838	4822 117 10361	680Ω 1% 0,1W
			3478	4822 050 21003	10k 1% 0,6W	3839	4822 051 20561	560Ω 5% 0,1W
			3479	4822 116 52234	100k 5% 0,5W	3839	4822 117 10361	680Ω 1% 0,1W
			3480	4822 050 21003	10k 1% 0,6W	3840▲	4822 052 10101	100Ω 5% 0,33W
			3481	4822 050 21003	10k 1% 0,6W	3841▲	4822 052 10108	1Ω 5% 0,33W
			3482	4822 116 52245	150k 5% 0,5W	3842▲	4822 052 10108	1Ω 5% 0,33W
			3483	4822 116 52291	56k 5% 0,5W	3843	3198 013 01520	1k5 PM2 1/2W
			3486	4822 050 21003	10k 1% 0,6W	3845	4822 116 52272	330k 5% 0,5W
			3487	4822 052 11108	1Ω 5% 0,5W	3860▲	4822 052 10109	10Ω 5% 0,33W
			3492	4822 053 21334	330k 5% 0,5W	3864	4822 117 11503	220Ω 1% 0,1W
			3493	4822 050 21003	10k 1% 0,6W	3865	4822 117 10833	10k 1% 0,1W



3002	4822 117 11504	270Ω 1% 0,1W
3003	4822 117 11139	1k5 1% 0,1W
3004	4822 051 20332	3k3 5% 0,1W
3007	4822 117 10361	680Ω 1% 0,1W
3007	4822 117 13577	330Ω 1% 1,25W
3008	4822 051 10102	1k 2% 0,25W
3021	4822 051 20561	560Ω 5% 0,1W
3022	4822 051 20391	390Ω 5% 0,1W
3023	4822 051 20561	560Ω 5% 0,1W
3024	4822 051 10102	1k 2% 0,25W
3025	4822 051 20391	390Ω 5% 0,1W
3026	4822 117 11449	2k2 5% 0,1W
3027	4822 051 20391	390Ω 5% 0,1W
3028	4822 051 20562	5k6 5% 0,1W
3029	4822 051 20472	4k7 5% 0,1W
3030	4822 051 20122	1k2 5% 0,1W
3031	4822 116 83933	15k 1% 0,1W
3032	4822 051 20472	4k7 5% 0,1W
3033	4822 116 83933	15k 1% 0,1W
3034	4822 117 10833	10k 1% 0,1W
3035▲	4822 052 10229	22Ω 5% 0,33W
3037	4822 051 20182	1k8 5% 0,1W
3038	4822 051 20182	1k8 5% 0,1W
3081	4822 117 10833	10k 1% 0,1W
3082	4822 117 10833	10k 1% 0,1W
3083	4822 116 52276	3k9 5% 0,5W
3201	4822 116 83868	150Ω 5% 0,5W
3202	4822 117 13579	220k 1% 0,1W
3203	4822 116 83868	150Ω 5% 0,5W
3204	4822 117 10834	47k 1% 0,1W
3206	4822 116 83868	150Ω 5% 0,5W
3207	4822 117 13579	220k 1% 0,1W
3		



7860	4822 130 44154	BF199
7861	4822 130 42589	BF370
7862	4822 130 41617	BD830
7863	4822 130 41616	BD829
7864	4822 130 44568	BC557B
7865	9340 350 20116	BFQ151
7921▲	9322 140 38682	STR-F6454
7922	4822 130 60373	BC856B
7929▲	8238 274 02070	TCET1103G
7932	4822 130 60511	BC847B
7932	5322 130 60159	BC846B
7942	4822 209 80591	LM317T
7944	4822 130 60511	BC847B
7944	5322 130 60159	BC846B
7946	4822 130 60511	BC847B
7946	5322 130 60159	BC846B
7948	4822 130 60511	BC847B
7948	5322 130 60159	BC846B
7951	4822 130 60511	BC847B
7951	5322 130 60159	BC846B
7953	4822 130 60511	BC847B
7953	5322 130 60159	BC846B
7955	4822 130 60511	BC847B
7955	5322 130 60159	BC846B
7965	4822 130 40855	BC337
7967	9322 137 01682	SI-3050C
7971	4822 209 16707	SE140N
7987	4822 130 60373	BC856B
7990	4822 130 60373	BC856B
7991	4822 130 60511	BC847B
7991	5322 130 60159	BC846B
7992	4822 130 60511	BC847B
7992	5322 130 60159	BC846B
9015	4822 157 62552	2,2UH
9016	4822 157 62552	2,2UH